

059644831 052401

1. A method of addressing the problem of clotting in an idle catheter tube indwelling within a vessel of a medical patient comprising the acts of:
 - advancing a deflated balloon along a hollow interior of the idle indwelling catheter tube to a distal end thereof;
 - inflating the balloon to close and seal the hollow interior at the distal end of the idle indwelling catheter tube to deny blood access to the hollow interior.
2. A method according to Claim 1 further comprising the act of purging the hollow interior of the catheter tube in a proximal-to-distal direction with a suitable liquid under pressure.
3. A method according to Claim 2 wherein the purging act precedes the inflating act.
4. A method according to Claim 2 wherein the purging act follows the inflating act, the pressure of the liquid temporarily unsealing the inflated balloon.
5. A method according to Claim 2 wherein the purging act takes place across a slit valve.
6. A method according to Claim 1 further comprising the acts of deflating the balloon and causing flow through the hollow interior of the catheter tube.
7. A method according to Claim 6 further comprising the act of withdrawing the balloon after the deflating act and before the causing act.

8. A method according to Claim 6 wherein the deflating act takes place across a slit valve.

9. A method according to Claim 1 wherein the inflating act takes place across a slit valve.

10. A method of addressing the problem of clotting in idle ingress and egress companion catheter tubes indwelling within a vessel of a medical patient, comprising the acts of:

advancing a deflated balloon along a hollow interior of each idle ingress and egress catheter tube to a distal end of each;

inflating the respective balloons to close and seal the hollow interior at the distal end of each catheter tube, thereby denying blood access to the hollow interior of each.

A
11. A method according to Claim 10 further comprising the act of purging the hollow interior of one or both catheter tubes in a proximal-to-distal direction with a suitable liquid under pressure.

12. A method according to Claim 11 wherein the purging act precedes the inflating act.

13. A method according to Claim 11 wherein the purging act follows the inflating act, the pressure of the liquid temporarily unsealing the inflated balloon.

14. A method according to Claim 11 wherein the purging act takes place across a slit valve.

15. A method according to Claim 10 further comprising the acts of deflating both balloons and causing ingress and egress flow through the respective hollow interiors of the catheter tubes.

16. A method according to Claim 15 further comprising the act of withdrawing the balloon after the deflating act and before the causing act.

17. A method according to Claim 15 wherein the deflating act takes place across a slit valve.

18. A method according to Claim 10 wherein the inflating act takes place across a slit valve.

19. A method of addressing the problem of clotting in a catheter tube indwelling within a vessel of a patient comprising the acts of:

terminating flow along a hollow interior passageway of the indwelling catheter tube;
after the terminating act, inflating a balloon to close and seal the hollow interior passageway at a distal end of the indwelling catheter tube to deny blood in the vessel access to the hollow interior.

20. A method according to Claim 19 further comprising the act of purging the hollow interior of the catheter tube in a proximal-to-distal direction with a suitable liquid under pressure.

21. A method according to Claim 20 wherein the purging act precedes the inflating act.

22. A method according to Claim 20 wherein the purging act follows the inflating act, the pressure of the liquid temporarily unsealing the inflated balloon.

23. A method according to Claim 20 wherein the purging act takes place across a slit valve.

24. A method according to Claim 19 further comprising the acts of deflating the balloon and causing flow through the hollow interior passageway of the catheter tube.

25. A method according to Claim 19 further comprising the act of withdrawing the balloon after the deflating act and before the causing act.

26. A method according to Claim 24 wherein the deflating act takes place across a slit valve.

27. A method according to Claim 19 wherein the inflating act takes place across a slit valve.

28. A method of addressing the problem of clotting in ingress and egress companion catheter tubes indwelling within a vessel of a medical patient, comprising the acts of:

terminating ingress and egress flow along hollow interior passageways of the indwelling catheter tubes, respectively;

after the terminating step, inflating balloons to close and seal the respective hollow interior passageways at the distal ends of the indwelling ingress and egress catheter tubes to deny blood in the vessel access to the hollow interior passageways.

29. A method according to Claim 28 further comprising the act of purging one or both hollow interior passageways in a proximal-to-distal direction with a suitable liquid under pressure.

30. A method according to Claim 29 wherein the purging step precedes the inflating step.

31. A method according to Claim 27 wherein the purging step follows the inflating step, the pressure of the liquid temporarily unsealing the inflated balloon.

32. A method according to Claim 29 wherein the purging act takes place across a slit valve.

33. A method according to Claim 28 further comprising the acts of deflating the balloons and causing ingress and egress flow through the hollow interior passageways, respectively.

34. A method according to Claim 33 wherein the deflating act takes place across a slit valve.

35. A method according to Claim 28 wherein the inflating act takes place across a slit valve.

36. In combination, a catheter tube for selective flow through a hollow passageway of the catheter tube to or from a patient and a balloon selectively inflated to close and seal the hollow passageway at a distal end of the catheter tube against entry of blood when flow is not occurring through the hollow passageway.

37. A combination according to Claim 36 wherein the balloon is carried near a distal end of an inflation/deflation stem extending within the hollow passageway for substantially the full length of the catheter tube.

38. A combination according to Claim 37 wherein the stem carries distance indicia for locating the balloon at the distal end of the catheter tube.

39. A combination according to Claim 37 wherein a seal is interposed between the catheter tube and the stem within the hollow passageway at a proximal end of the catheter tube, the stem being selectively displaceable along the hollow passageway through a central opening in the seal.

40. A combination according to Claim 39 wherein the seal is selectively compressed by a control to clamp against the stem to prevent stem displacement.

41. A combination according to Claim 36 wherein the balloon is carried by the catheter tube within the hollow passageway at the distal end of the catheter tube.

42. A combination according to Claim 36 wherein the balloon comprises a weak portion of a wall of the catheter tube.

43. A combination according to Claim 41 further comprising a pathway along the catheter tube by which fluid under pressure is delivered to and removed from the balloon to selectively inflate and deflate the balloon.

A

44. A combination according to Claim 36 further comprising a port adjacent the proximal end of the catheter tube by which a flushing liquid under pressure is selectively displaced proximal-to-distal within the hollow passageway of the catheter tube.

45. In combination, companion ingress and egress catheter tubes for selective flow through a hollow passageway in each catheter tube respectively to and from the patient and a balloon associated with each catheter to accommodating selective inflation of the balloons to generally concurrently close and seal the two hollow passageways at respective distal ends of the ingress and egress catheter tubes against entry of blood from a vessel of the patient when flow is not occurring through the hollow passageways.

46. A combination according to Claim 45 wherein the balloons are carried near distal ends of spaced inflation/deflation stems extending respectively within the hollow passageways for substantially the full length of the respective catheter tubes.

47. A combination according to Claim 46 wherein a seal is interposed between each catheter tube and the associated stem within the hollow passageway of said catheter tube at a proximal end of said catheter tube, each stem being selectively displaceable through a central opening within the associated seal.

48. A combination according to Claim 47 wherein each seal is selectively compressed by a control to clamp against the associated stem to prevent stem displacement.

49. A combination according to Claim 45 wherein each balloon is carried by the associated catheter tube within the hollow passageway at the distal end thereof.

50. A combination according to Claim 47 further comprising a pathway along each catheter tube by which fluid under pressure is delivered to the associated balloon to selectively inflate and deflate the associated balloon.

51. A combination according to Claim 45 further comprising a port near the proximal end of each catheter tube by which a flushing liquid under pressure is selectively displaced proximal-to-distal within the hollow passageways of the catheter tubes.

52. A method of addressing the problem of clotting in an idle catheter tube placed within a vessel of a medical patient comprising the acts of:

advancing a deflated balloon along a hollow interior of the idle catheter tube to a distal end thereof prior to placement of the catheter tube in the vessel;

inflating the balloon to close and seal the hollow interior at the distal end of the catheter tube;

collectively introducing the distal end of the catheter tube and the inflated balloon into the vessel.

53. A method according to Claim 52 further comprising the acts of deflating the indwelling balloon and accommodating liquid flow through the catheter tube.

54. A method of addressing the problem of clotting in idle ingress and egress companion catheter tubes placed within a vessel of a medical patient, comprising the acts of:

advancing a deflated balloon along a hollow interior of each idle ingress and egress catheter tube to a distal end of each prior to placement of either catheter tube in the vessel;

inflating the respective balloons to close and seal the hollow interior at the distal end of each catheter tube;

introducing each inflated balloon and the distal end of the associated catheter tube together into the vessel.